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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,634	08/06/2003	Rowland Saunders	GEMS8081.174	1633
27061	7590	08/09/2005	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS) 14135 NORTH CEDARBURG ROAD MEQUON, WI 53097			KAO, CHIH CHENG G	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/604,634	SAUNDERS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 12-15 is/are allowed.
- 6) Claim(s) 1-4,6-11 and 16-19 is/are rejected.
- 7) Claim(s) 5 and 20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/6/03.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The specification is objected to because of a minor informality (paragraph 40, line 3, "cylindrical r rod", wherein "r" should be deleted). Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hansen (US Patent 3407300).
3. Regarding claim 1, Hansen discloses a method comprising the steps of forming a core of base material (figs. 3-6, #45, or fig. 1, #20) and applying a tapered layer of attenuating material (figs. 3-5, #39, or fig. 1, #17) to the core.
4. Regarding claims 2-4, Hansen further discloses placing a cast (fig. 1, #14) circumferentially around the core (fig. 1, #20), wherein the cast (fig. 1, #14) has an inner surface

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(fig. 1, inner surface of #14) creating varying degrees of thickness circumferentially around the core (fig. 1, #20), and further comprising the steps of placing the cast (fig. 1, #14) circumferentially around the core (fig. 1, #20) such that a void of varying thickness (fig. 1, void before #17 is placed) is created between an outer surface of the core (fig. 1, #20) and an inner surface of the cast (fig. 1, #14) and filling the void with the attenuating material (fig. 1, #17, and col. 4, lines 53-57).

5. Regarding claims 6-8, Hansen further discloses wherein attenuating material is at least one of an attenuating alloy and an attenuating epoxy (col. 4, lines 53-57), wherein attenuating material is tungsten (col. 4, lines 53-57), and further comprising the step of affixing a thin layer of tungsten (fig. 1, #17, and col. 4, lines 53-57) to the core (fig. 1, #20) and then machining the thin layer to have a varying thickness (col. 4, lines 60-64).

6. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn et al. (US Patent 6672773).

Glenn et al. discloses a method comprising forming a core of base material (fig. 3, #50) and applying a tapered layer of attenuating material (fig. 3, defined by #48) to the core (fig. 3, #50), and further discloses wherein the core includes a cylindrical rod (col. 3, lines 22-23).

7. Claims 1 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Gates et al. (US Patent Application Publication 2002/0144613).

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Gates et al. discloses a method comprising forming a core of base material (fig. 4, #401 and 401') and applying a tapered layer of attenuating material (fig. 4, #407) to the core, and further discloses wherein the base material includes stainless steel (paragraph 31, line 3).

8. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Sanghera et al. (US Patent 5953478).

Sanghera et al. discloses a process comprising forming a solid cylindrical rod of a first material (fig. 2, #22) and depositing a layer of a second material (fig. 2, #18) designed to substantially block x-rays (col. 3, line 3, "Pb") on the cylindrical rod.

9. Claims 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Singh et al. (US Patent 6620300).

Singh et al. discloses a process comprising forming a solid cylindrical rod of a first material (fig. 6c, #10) and depositing a layer of a second material (fig. 6c, #21) designed to substantially block x-rays (col. 7, lines 47-50) on the cylindrical rod, wherein the second material includes tungsten (col. 7, lines 47-50).

10. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawai et al. (JP 61-37367).

Kawai et al. discloses a process comprising forming a solid cylindrical rod of a first material (abstract, purpose, line 4) and depositing a layer of a second material designed to substantially block x-rays (abstract, purpose, line 7, "W") on the cylindrical rod, wherein the first

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material includes stainless steel (abstract, purpose, line 4), and wherein the second material includes tungsten (abstract, purpose, line 7).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn et al. as applied to claim 1 above, and further in view of Ishiharada et al. (US Patent 5692088).

Glenn et al. discloses a method as recited above.

However, Glenn et al. does not disclose sputtering a layer of attenuating material to a core.

Ishiharada et al. teaches sputtering (col. 9, lines 19-21) a layer of attenuating material (fig. 3, #5) to a core (fig. 3, #3).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the method of Glenn et al. with the sputter of Ishiharada et al., since one would be motivated to make such a modification for better protection (col. 9, lines 5-7) as shown by Ishiharada et al.

12. Claims 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen in view of York et al. (US Patent 3997794).

Hansen disclose a process comprising the steps of forming a solid rod of a first material (fig. 1, #20) and depositing a layer of second material (fig. 1, #17) designed to substantially block x-rays (col. 4, lines 53-57) on the rod, wherein the second material is tungsten (col. 4, lines 53-57), and further comprising the step of machining the layer of second material (col. 4, lines 60-64) to be tapered circumferentially (figs. 1 and 2, #17) around the rod (fig. 1, #20).

However, Hansen does not disclose a cylindrical rod.

York et al. teaches a cylindrical rod (figs. 2 and 3, #3).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the process of Hansen with the cylindrical rod of York et al., since one would be motivated to make such a modification for better controlling the focus (figs. 2 and 3) as implied from York et al.

***Allowable Subject Matter***

13. Claims 12-15 contain allowable subject matter. Claims 5 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and all intervening claims. The following is a statement of reasons for the indication of allowable subject matter.

14. Regarding claim 5, prior art does not disclose or fairly suggest a method including the step of allowing attenuating material to cure and then removing a cast, in combination with all the limitations in the claim, all intervening claims, and the base claim.

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15. Regarding claim 12, prior art does not disclose or fairly suggest a CT collimator mandrel including the mandrel formed by shaping a bulk of supporting material into a core, positioning the core in a cast such that a non-uniform void is created between an outer surface of the core and an inner surface of the case, placing attenuating material into the void, and removing the cast upon curing of the attenuating material, in combination with all the limitations in the claim. Claims 13-15 contain allowable subject matter by virtue of their dependency.

16. Regarding claim 20, prior art does not disclose or fairly suggest a process including the step of affixing a pivot stud to each end of a cylindrical rod to support connection of the rod to an eccentrics assembly, in combination with all the limitations in the claim and base claim.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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